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| 09/718,767      | 11/22/2000  | Tsuyonobu Hatazawa   | 09792909-4673       | 2706             |

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EXAMINER

CREPEAU, JONATHAN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1746

DATE MAILED: 05/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/718,767

Applicant(s)

HATAZAWA ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 3, 2003 has been entered.

This Office action addresses claims 1-11. Even though the claims have been amended, they remain rejected under 35 USC §103 over the art of record. Furthermore, claim 5 is newly rejected under 35 USC §112, second paragraph, as necessitated by the amendment to claim 1.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites that "said gas absorbable material is mixed with a resin material and the mixture is molded to form a gas absorbable member, and said gas absorbable member is inserted...". However, parent claim 1 defines "a first gas absorbable member" and "a second gas

absorbable member.” Hence, it is unclear which member (the first or second) is being referenced by claim 5. Correction is required.

***Claim Rejections - 35 USC § 103***

4. Claims 1-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 95/13629 (Chaloner-Gill) in view of Bullock et al (U.S. Patent 5,219,676).

Regarding claim 1, on page 7, line 16 et seq., Chaloner-Gill teaches a nonaqueous electrolyte battery comprising a lithium metal anode. Regarding claim 11, the battery is a secondary battery (see page 5, lines 6-8). With regard to claim 1, as shown in Figure 1, the battery element (10) is contained in an outer covering member composed of a laminated film (5) and is sealed by heat seals (32, 33, 34, 35). Regarding claims 1, 5, and 6, the battery comprises a gas absorbing material which is mixed with a resin material and extruded (i.e., molded) to form a gas absorbing member which forms one of the inner layers of the laminate (see page 5, lines 8-24). Regarding claim 1, the gas absorbing material is present in a first gas absorbable member on a first side of the battery element (in laminate 30) and in a second gas absorbable member on a second side of the battery element (in laminate 31) (see Figs. 1, 4, and 5). Regarding claims 2-4, the gas absorbing material may comprise a porous metal oxide (e.g., alumina) or activated carbon material (see page 19, lines 19 and 20).

The reference does not expressly teach that the gas absorbing material is present in an amount of 0.1 to 95 wt. percent on a basis of a weight of the resin material, as recited in claim 1.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use a

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suitable amount of gas absorbing material based on the size of the battery and/or electrode element, thereby rendering the claimed range obvious. It has been held that the discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). In this case, it is known that an amount of gas absorbing material can be selected based upon the size of the battery, as shown by column 6, lines 26-35 of Bullock et al.:

The amount of the gel will vary from battery size to battery size within the guidelines of being a sufficient quantity to absorb all water vapor produced during the self-discharge reactions. For normal 12V automobile batteries having six cells, the amount could range between about 50 grams to 300 grams. One skilled in the art could readily select a desiccant quantity by knowing the battery size, plate construction and volume of electrolyte left in the battery after the dumping step.

Although Bullock relates to lead-acid batteries, its teachings regarding the battery size would be applicable to all batteries employing a gas absorbing agent. Accordingly, the artisan would be motivated to use a suitable amount of gas absorbing material in the battery of Chaloner-Gill, thereby rendering the subject matter of claim 1 obvious.

5. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 95/13629 in view of Bullock et al. as applied to claims 1-6 and 11 above, in further view of Kamauchi et al (U.S. Patent 5,538,814).

WO 95/13629 does not expressly teach that the electrolyte is a gel electrolyte (claim 7), that the negative electrode contains a carbon intercalation material (claims 8, 9), or that the positive electrode contains a composite oxide of lithium and a transition metal (claim 10).

The patent of Kamauchi et al is directed to a lithium secondary battery. The battery may contain lithium cobalt oxide in the positive electrode (col. 4, line 30), a carbon negative electrode (col. 7, line 7), and a gel electrolyte containing a high molecular weight matrix polymer (col. 8, line 67; col. 11, line 5).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of Kamauchi et al. provides the artisan sufficient motivation to use these materials in the battery of WO 95/13629. In column 4, line 41, Kamauchi et al. teach that the lithium cobalt oxide, when combined with other materials, provides the battery with "high electromotive force," and in column 7, lines 6-9, the reference teaches that the carbon negative electrode "effectively prevents dendrite[s] without lowering energy density of the secondary battery." Further, the reference teaches in column 12, lines 46-59 that the gel electrolyte "shows good adhesion with electrodes, which leads to an improved ionic conductivity." Accordingly, the artisan would be motivated to use each of these materials in the battery of WO 95/13629.

### *Response to Arguments*

6. Applicant's arguments filed March 3, 2003 have been fully considered but they are not persuasive. Applicants assert that "[u]nlike Applicants' claim 1, nowhere does Chaloner-Gill disclose or suggest providing first and second gas absorbable members in addition to its outer covering member 5." However, it is the Examiner's position that claim 1 does not actually require first and second gas absorbable members which are separate and distinct from laminated

packaging layers. Claim 1 recites, in part, "an outer covering member composed of a laminated film" and "a gas absorbable material and resin material interposed between an outermost layer of said outer covering member and said battery element." This claim language provides for a configuration wherein the gas absorbable material is provided in one of the inner laminate layers. Such a configuration is further recited in instant claim 6 and is also shown in Figures 7 and 8 of the instant application. Accordingly, as the Chaloner-Gill reference also discloses this configuration, claim 1 is still not considered to distinguish over this reference.

### *Conclusion*

7. The following notes are made with respect to the references cited in the International Search Report which bear an "X" label:

EP 895296, EP 605734, and EP 075132 do not anticipate claim 1 because they do not teach at least the feature of a weight ratio of the gas absorbable material to a resin material.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-5408 or (703) 305-5433.

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Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

May 13, 2003

*J. Lyons*  
Jonathan Crepeau  
Patent Examiner  
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